



[Billing Code 4140-01-P]

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The invention listed below is owned by an agency of the U.S.

Government and is available for licensing to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

FOR FURTHER INFORMATION CONTACT: Licensing information and copies of the patent applications listed below may be obtained by communicating with the indicated licensing contact Peter Soukas at the Technology Transfer and Intellectual Property Office, National Institute of Allergy and Infectious Diseases, 5601 Fishers Lane, Rockville, MD, 20852; tel. 301-496-2644. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished patent applications.

SUPPLEMENTARY INFORMATION: Technology description follows.

A Full-Length Infectious cDNA Clone of Zika Virus from the 2015 Epidemic in Brazil as a Genetic Platform for Studies of Virus-Host Interactions and Vaccine Development

Description of Technology:

An arthropod-borne virus, Zika virus (ZIKV), has recently emerged as a major human pathogen. Associated with complications during perinatal development and Guillain-Barré syndrome in adults, ZIKV raises new challenges for understanding the molecular determinants of flavivirus pathogenesis. This underscores the necessity for the development of a reverse genetic system based on an epidemic ZIKV strain. This technology relates to the generation and characterization in cell cultures of an infectious cDNA clone of ZIKV isolated from the 2015 epidemic in Brazil. The cDNA-derived ZIKV replicated efficiently in a variety of cell lines, including those of both neuronal and placental origin. It was observed that the growth of cDNA-derived virus was attenuated compared to the growth of the parental isolate in most cell lines, which correlates with substantial differences in sequence heterogeneity between these viruses that were determined by deep-sequencing analysis. Moreover, these results indicate that caution should be exercised when interpreting the results of reverse-genetics experiments in attempts to accurately predict the biology of natural viruses. Finally, a Vero cell-adapted cDNA clone of ZIKV was generated that can be used as a convenient platform for studies aimed at the development of ZIKV vaccines (live attenuated and inactivated) and therapeutics.

This technology is available for licensing nonexclusively in accordance with 35 U.S.C. § 209 and 37 CFR Part 404, as well as for further development and evaluation under a research collaboration.

This technology is further described in Tsetsarkin et al., “A Full-Length Infectious cDNA Clone of Zika Virus from the 2015 Epidemic in Brazil as a Genetic Platform for Studies of Virus-Host Interactions and Vaccine Development,” mBio. 2016 Jul-Aug; 7(4): e01114-16. Published online 2016 Aug 23. doi: 10.1128/mBio.01114-16.

Potential Commercial Applications:

- Diagnostics
- Vaccines
- Development of therapeutics

Competitive Advantages:

- Use in development of flavivirus vaccines
- Virus growth in various cell lines
- Developing and developed world research tool

Development Stage:

- Research materials

Inventors: Alexander Pletnev (NIAID), Konstantin Tsetsarkin (NIAID).

Intellectual Property: HHS Reference No. E-114-2017/0

Licensing Contact: Peter Soukas, J.D., 301-594-8730; peter.soukas@nih.gov.

Collaborative Research Opportunity: The National Institute of Allergy and Infectious Diseases is seeking statements of capability or interest from parties interested in

collaborative research to further develop, evaluate or commercialize vaccine(s) or diagnostics for prophylaxis against flavivirus infections. For collaboration opportunities, please contact Peter Soukas, J.D., 301-594-8730; peter.soukas@nih.gov.

Dated: March 23, 2017.

Suzanne Frisbie,

Deputy Director,

Technology Transfer and Intellectual Property Office,

National Institute of Allergy and Infectious Diseases.

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